

LOW CARBON HIGH SPEED METAL WIRE

Abstract of Disclosure

The present invention is a weld wire comprising a sheath encapsulating a metal core made of powdered metal, wherein a fill percentage of the metal core is no less than approximately 12%. The metal core comprises a core composition alloyed with an alloying element or an combination of elements comprising Cr, Mo, V, W, Hf and Nb or combinations thereof, wherein a total weight percentage of the alloying element or the combination of elements in the core composition does not exceed approximately 1%. In a particular embodiment, the alloying element is Mo in the amounts selected from the range of about 0 to about 0.5 percent by weight and the fill percentage of the metal core is selected from the range of about 12% to about 30 %. In a particular embodiment of the invention, the total percentage of the combination of elements is selected from the range of about 0.4% to about 0.8%.

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